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ABSTRACT

In the first section of the paper, the writer surveys the literature of the school-size controversy: the research and the opinions. The writer "finds much of the latter and very little of the former upon which to draw conclusions....A section of the publication is devoted to subjective consideration of school characteristics which often tend to favor small high schools, and which are usually given little attention by writers who favor large schools." Factors discussed include pupil-teacher ratios, curricular offerings, co-curricular participation, transportation, teacher quality, and school atmosphere. (BO)

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Ideal High School Size: A Mirage in the Desert

by

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Preface

Recent research findings have cast doubt on the conclusions made by schoolmen years ago that one of the prime evils of American Secondary Education is the small high school. This writer takes a good look at the literature of the school size controversy: the research and the opinions. He finds much of the latter and very little of the former upon which to draw conclusions. Statements of "experts" are examined critically rather than accepted at face value. Clues are sought which might explain conflicting findings. The matter of sound criteria is examined, and tentative conclusions are reached on the basis of the available evidence.

A second section of the publication is devoted to subjective consideration of school characteristics which often tend to favor small high schools, and which are usually given very little attention by writers who favor large schools. This section, which refers to research findings only in a general way, includes some speculations by the writer which may account for the recent research findings tending to contradict the assumption that large high schools are best.

PART ONE

Introduction

How big should a high school be? This question has been asked many times. I have been asked this question several times recently, usually by school superintendents. This is an important question that should be faced cautiously, honestly, and only after thorough study. The question is a hard one to answer for several reasons:

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(1) lack of agreement on the purposes of a high school; or to put in in another way, the variety of roles seen for high schools by various groups of citizens; (2) the complexity and number of variables relating to any measure of educational quality; (3) the complex nature of mankind, often producing findings that are unpredictable and unexplainable; (4) disagreement concerning the role of government in the overall education of citizens; and (5) a general lack of clear understanding of how to evaluate schools in terms of predetermined objectives.

Because of these difficulties, each time someone claims to have seen the vision of ideal high school size, it has turned out to be a mirage. We have not just one mirage but a series of mirages, until it is doubtful if anyone will recognize the real thing when he sees it. This paper will attempt to point out some of the mirages and then to identify sound criteria by which reasonable conclusions concerning ideal high school size may be reached.

I. The Mirage of Authoritative Statements

A glimmer of hope concerning optimum high school size appears in James Bryant Conant's report, The American High School Today.[1] Mr. Conant did not say what high school size is ideal, but he did say that elimination of small high schools is a top priority.[2] What was the basis of Mr. Conant's decisions? Apparently it was the rapid sweep of the Conant team through 103 "comprehensive" high schools in a short period of time. To one familiar with the process of school evaluation, it is obvious that the amount of time spent by the Conant survey does not justify support of the team's conclusions.

Considering the amount of publicity given the Conant survey, one might assume that the author is an authority on high school education who can discern at a

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[1] James Bryant Conant, The American High School Today. (New York: McGraw-Hill Book Company, Inc., 1959.)

[2] Ibid., p. 37.

glance how good a school is. Instead, we find that Mr. Conant is a college administrator and teacher. His experience does not make him an expert on high schools.

The criteria used by the Conant team in evaluating high schools sheds some light on the validity of the findings. It is well to consider these criteria carefully one by one, as they are given in the checklist used in evaluating schools.[3] The first section is listed as follows:

A. Adequacy of general education for all as judged by:
   1. Offerings in English and American literature and composition
   2. social studies, including American history
   3. ability grouping in required courses

Provisions 1 and 2 would be found in any high school, large or small. We have no empirical evidence that their presence makes a school either good or bad. Provision 3, ability grouping, is one favored personally by this writer, but it is illegal in some parts of the country. At any rate, the quality of the learning, not the structure of the class, is what is important. We turn now to the second provision.

B. Adequacy of non-academic elective programs as judged by:
   4. The vocational programs for boys and commercial programs for girls
   5. Opportunities for supervised work experience
   6. Special provisions for very slow readers

At this point we run head-on into the question of student need. Can we assume that vocational education is totally the function of the high school? How much vocational education is mandatory for students in grades 9 through 12? Should the high school duplicate other vocational facilities? Mr. Conant has not laid the proper groundwork by answering these questions in advance. The kind of specialized education so famous in large high schools may very well be a waste of money

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[3]Conant, Op. Cit., pp. 19-20.

and a disservice to the students if the job market develops as many believe it will. Many jobs will rapidly become obsolete. High school students who turn early to these vocations will have to learn new ones which didn't even exist a few years ago.

Of particular interest is the criterion, "opportunities for supervised work experience." Large high schools will be more likely than small high schools to provide work experience because of the need for this experience by students in urban communities. Rural and small-town area students are more likely to have work experience that is not instituted by the school because their work opportunities are more plentiful. The amount of school-provided work experience is therefore worthless in evaluating a school.

"Special provisions for very slow learners" cannot be observed in a flying trip through a school. It can perhaps best be determined by the pupil-teacher ratio - something the Conant team apparently did not examine, although there was some scrutiny of certain work loads.[4]

Let us consider separately Conant's criteria under section C, "Special provisions for the academically talented students." Apparently it is news to Conant that individual teachers can daily make "special provisons for challenging the highly gifted." Thousands of teachers do this daily without sounding a trumpet before them. The same can be said for "Special instruction in developing reading skills." A cursory examination cannot tell how well reading is taught. Summer session offerings are not an important criterion of the good school; they are more likely to be provided where a large number of students have failed during the regular school year. "School days organized into seven or more instructional periods" is not even considered good practice in 1970.

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[4]Conant, Op. Cit., p. 102.

The following "other features" were added to the criteria:

12. Adequacy of the guidance service
13. Student morale
14. Well-organized home rooms
15. Success of the school in promoting an understanding between students with widely different academic abilities and vocational goals (effective social interaction among students)

Adequacy of guidance cannot be measured in terms of the number of guidance officers, but rather in the wholesomeness and success of those young people who constitute the educational product. On this point there is now good evidence that small high schools have a distinct advantage. "Student morale" is a vague term that the Conant team did not even pretend to measure. As for the organization of home rooms, it varies greatly from school to school. The present tendency is to abolish home rooms, for better or worse.

In item 15 we have a crucial point of conjecture or speculation. The basic question is this: Is it mandatory that the American high school be a huge mixing chamber, into which all of the social ingredients must be poured so as to produce a uniform, pre-determined, synthesized graduate? Or is it better to educate adolescents within their home communities, where they will receive more individual attention, guidance, encouragement, and the moral standards of local citizens, including their parents? Conant has chosen the former, and in doing so he has disregarded the advantages of local control as well as the disadvantages of herding large numbers of students into large schools.

Summing up the Conant standards, we can see that a quick survey of a number of American high schools was made by a team headed by a brilliant scholar, but one who has little direct experience with American high schools. The standards for a "good" school were arbitrarily chosen, with little empirical evidence to support them. The appraisals of schools were cursory rather than thorough. Important predictive variables such as pupil-teacher ratio were ignored. The ray

of hope for enlightenment concerning ideal high school size as indicated by the Conant studies has faded to a mirage. They have little to offer.

II. The Mirage of Cheaper Education

One way of approaching the problem of optimum high school size is to view it in terms of some monetary expression, such as per pupil cost of instruction. This can be a tricky game unless the same ground rules are recognized for all comparisons among schools. The cost approach is a popular one because it can be used to appeal to taxpayers, especially those who have no children in school. Those who are interested in the best education would do well to examine the per pupil cost figures presented to them to see what they are getting for their money. The old saying, "Figures don't lie, but liars can figure" is a good one to keep in mind.

Some years ago the author participated in a research project on educational finance for a teacher organization, and spent considerable time studying pupil-teacher ratios in the fifty states. With some exceptions, it was generally found to be true that the ratios were wide in large school districts and narrow in small school districts. Very large school districts are top-heavy with highly paid supervisory and coordinative non-teaching staff personnel whose inclusion in the cost of instruction tends to raise per pupil cost sharply. One result is a sharp contrast between the pupil-teacher ratio and the pupil-staff ratio. Unfortunately, in large districts there is some tendency to increase the pupil-teacher ratio in order to keep per pupil cost down. In contrast, the small school district is more likely to have a high per pupil cost because the pupil-teacher ratio is narrow. Other factors being equal, the quality of teaching in these smaller districts should be better.

A recent California study by Neal Rosenberg illustrates the cost factor which shows the per pupil cost pattern by district size.

Elementary School Districts[5]	
Pupil Population	Ave. Cost Per Pupil
5-99	$398
100-249	351
250-499	319
500-999	308
1,000-4,999	320
5,000 up	329
High School Districts	
5-99	$992
100-199	712
200-399	556
400-599	598
600-999	514
1,000-4,999	501
5,000 up	481

Since pupil-teacher ratios were not given, the reader's attention is drawn to the per pupil cost factor only. But if the California schools run true to form, the pupil-teacher ratios will be much more favorable in smaller schools.

Because of the pupil-teacher ratio factor, quality of instruction tends to be inversely proportional to per pupil cost. Numerous other per pupil cost studies examined have also tended to ignore actual pupil-teacher ratios. Some other factors relating to per pupil cost also have not been considered. Per pupil cost is greater when bus transportation is provided for a high proportion of pupils, as is the case when the school draws from rural areas. Most small town high schools have this necessary but expensive feature: high per pupil transportation cost. It would seem therefore that per pupil cost is another mirage as an indicator of ideal high school size, even though this cost should not be ignored.

III. Acceptable Standards For Sound Research on School Size

If most research on high school size has not been soundly done, as shown by much of the literature of the past 15 years, it behooves us to establish sound criteria by which the good research can be identified. We may then observe find-

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[5] Neal E. Rosenberg, "School Sizes as a Factor of School Expenditure." Journal of Secondary Education, 45:135-142, March, 1970.

ings of sound research only, and proceed to conduct more of the acceptable kinds of investigations.

A basic rule for the evaluation of educational programs is that the criteria for their evaluation must come explicitly from the stated objectives and be <u>independent of the policies and processes that are a part of the program being evaluated</u>. Thus if the offering of certain high school courses is part of an educational program, one cannot evaluate the effectiveness of the program simply by recording that such courses are being offered. Of course they are offered where they are required. But the researcher must not confuse ends and means in the evaluative process. It becomes necessary to show that the offering of certain courses (means) produces better education as measured by suitable criteria outside the educative process (ends).

The clues to good criteria can be found in statements of objectives for American schools in general and high schools in particular. Following are some generally accepted purposes or functions of American high schools:

1. good citizenship
2. vocational preparation (whatever should be achieved by age 18)
3. successful preparation for higher education
4. "preparation for life"

From this rather vague list of functions it is possible to devise criteria for evaluating the effectiveness of a particular high school. "Good citizenship" is hard to measure. Juvenile delinquency might be a negative measure of good citizenship, but can it be related closely enough to be considered the product of the high school? There is need to define a set of behavioral objectives that are measurable before and after high school attendance.

Vocational preparation could be measured by acceptable standards if (1) there were similar vocational needs in various communities and similar vocational expectations on the part of various groups of students, and (2) there is agreement

that certain vocational needs should be fulfilled in high school. Unfortunately neither condition has been met.

Preparation for higher education can best be measured by degree of success in college, or by noting the proportion of successful college candidates. School size can be related to college grade point ratios or to the proportion of students succeeding in college.

Preparation for life might be measured in terms of a combination of competencies and attitudes. It can best be measured by performance rather than by earned credits. This criterion has great possibilities which so far have not been explored.

IV. Research Relating to High School Size

Various kinds of criteria have, during the past 15 years, been used to determine what differences exist in the characteristics of larger and smaller high schools. Examples of each are briefly summed here. Besides the Conant report, there are numerous studies which examine the curriculum, and in each case the curriculum of larger schools tends to be broader.[6] Using breadth of offering as the criterion for quality, one can easily conclude that large high schools have a distinct advantage.

When cost of instruction per pupil is the criterion for desirability, medium-sized schools appear to have the advantage. However, as previously mentioned, pupil-teacher ratios were not considered in most studies of cost per pupil. Some educators have looked critically at such size and cost statistics. L. W. Nelson concludes that quality of learning is not a function of the presence of numbers,

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[6] E. L. Vitalis, "Problems of the Smaller Secondary Schools," Minn. Journal of Education. 45:32 J. '65; S. S. Mayo, "What Size High School?", American School Board Journal, 144:32-3, Ja. '62; K. C. De Good, "Profile of the Small High School," Educational Leadership, 18: 170-2+, D'60; A. S. Green, "Size and the High School," American School Board Journal, 139: 19-20, D'59.

but rather a function of the presence or absence of desirable learning experiences.[7] L. J. Carlton observed the problems of numerous high schools of the Northwest. He concluded that a good many of the smaller schools cannot well be eliminated but can very easily be improved.[8] Other writers have questioned the value of bigness, pointing out various problems encountered by big schools.[9] While all of the studies cited above are worth reading, they do not center around criteria separate from the educative policies and practices which are a part of what is being evaluated. But let us look at one more factor in the internal structure of high schools: the co-curriculum. Since the co-curriculum also is part of the educational process being evaluated, it is not ideal as a criterion. It is, however, just as pertinent as the curriculum, to consider in relation to school size and quality education.

The weight of evidence strongly favors small high schools when the co-curriculum becomes the criterion. A 1964 comparison of co-curricula by Barker and Gump showed that students in small high schools on the average participate in several times as many activities as do students from large high schools.[10] Allan Wicker of University of Wisconsin-Milwaukee compared cognitive complexity and participation in activities of juniors in large and small high schools. He found that juniors in small high schools had significantly more positions of responsibility at a probability level of .001 than did juniors of large high schools.[11] E. J. Kleinert

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[7] L. W. Nelson, "Educational Opportunity and the Small Secondary School," National Association of Secondary School Principals Bulletin, 48:182-91 Ap. '64.

[8] L. J. Carlton, "Problems of the Small High School in the Northwest Association of Secondary Schools," National Association of Secondary School Principals Bulletin, 50:97-106, F '66.

[9] "When Schools Get Too Big For Boots," Times Education Supplement, 2736:917, Oct. 27, '67+; W. C. Schloerke, "Does Bigness Insure Quality?", Michigan Education Journal, 42:20-1, May, '65; J. R. Wiswasser, "Educational Efficiency Can't Be Measured in Dollars," Ohio Schools, 44:13-14, F. '66.

[10] Barker, Roger G. and Gump, Paul V., Big School, Small School, Stanford University Press, 1964, pp. 250.

[11] Allan Wicker, "Cognitive Complexity, School Size, and Participation in School Behavioral Settings: A Test of the Frequency of Interaction," Journal of Educational Psychology, 60:200-3, J. '69.

found a correlation of -.76 between high school size and the number of participants in co-curricular activities. The study, which was done in Southern Michigan, found a strong inverse relationship between high school size and the number of leadership roles available to students.[12] This means that the smaller the school, the richer the co-curriculum. Conversely, the larger the school, the poorer the co-curricular offering per student. Kleinert proposed that two steps be taken in large high schools in order to compensate for the lack of participation roles:

1. Divide larger schools into sub-schools
2. Emphasize activities and provide more kinds of roles for leadership and participation

The most acceptable criterion for evaluating high schools that has so far been used is success of high school graduates in college. Several studies have compared the college performance of graduates of larger and smaller high schools. In a 1956 study, Bertrand compared ACE test scores and grade point ratios of students in various school size categories.[13] He found college performance poorest for students from very small high schools. However, this group was far inferior in ability level, so the differences probably were not explained by school size, but rather by some fact inherent in the sampling process. The students were not equated for ability and the sampling was biased. Lathrop compared achievements and course patterns of students from large and small high schools at Iowa State College.[14] He concluded that size of high school has little effect on achievement at Iowa State College. Very few recent studies of this type are available. However, the author

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[12] E. J. Kleinert, "Effect of School Size on Student Activity Participation," National Association of Secondary School Principals Bulletin, 53:34-46, March, 1969.

[13] J. R. Bertrand, "Relation Between Enrollment of High School From Which Students Graduated and Academic Achievement of Agriculture Students, A&M College, Texas," Journal of Experimental Education, 25:59-69, S '59.

[14] I. T. Lathrop, "Scholastic Achievement at Iowa State College Associated With High School Size and Course Patterns," Journal of Experimental Education, 29:37-48, S '60.

found some possible evidence that students from small high schools tended to do better in college than students from larger high schools. A 1959 study at Wisconsin State University-Stevens Point showed that when grade point categories of large, medium-size, and small high schools were distributed by high school size, the smallest schools had the advantage and medium-sized school students fared next best. A cooperative dropout study conducted by the Wisconsin State University Consortium of Research Development, directed by David W. Coker, found that graduates of small high schools had significantly lower academic dropout rates than did graduates of larger high schools.[15] However, graduates of small high schools had tended to have somewhat higher high school ranks. The author analyzed the Coker data for Stevens Point further and found that while graduates of small high schools had indeed ranked highest in their high school classes, graduates of larger high schools did better on some other measures of student quality. The author combined the data for 6,100 entering freshmen at WSU-Stevens Point during a three year period, and sought to control the variable of high school rank while comparing the proportion of academic drops by size of high school graduating class. These comparisons favored the smallest graduating class size: 1-25 graduates. When graduates from the lower half of the high school class were considered separately, the lowest proportion of academic dropouts came from the smallest class size category.[16] This research does not prove that graduates of small high schools perform better in college than others. Exhaustive data are obtained for only one institution of higher education. No test of significance was applied to data in the final tables because cell sizes became too small in the final analysis for such a test.

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[15] David W. Coker, Diversity of Intellective and Non-Intellective Characteristics Between Persisting and Non-Persisting Students Among Campuses: Consortium of Research Development, 1967, pp. 39-40. (Copies of the document may be obtained from David W. Coker, Director of Counseling and Guidance; or from William H. Clements, Director of Institutional Research and Studies, Wisconsin State University, Stevens Point.)

[16] William H. Clements, A Third Look At High School Size, Office of Institutional Research, Wisconsin State University, Stevens Point. Series 4, Number 5, 1969 pp. 26.

In spite of its shortcomings, this study has a great deal of significance. This is one of the few studies using a criterion that is completely independent of the high school educative process. It tends to destroy the image of large high schools as being best. If graduates of very small high schools perform at least as well in college as graduates of large schools, a good many people have missed the mark in claiming that large high schools, with their varied programs, are better than small ones. This kind of research should be carried on in various parts of the country. Other research projects should be conducted using other criteria that are independent of the high school educative processes.

Before leaving the subject of previous research, we should mention two quite exhaustive studies recently done relating to high school size and quality of education. The first is a Canadian study entitled "The Small High School in Alberta."[17] This investigation compared the programs, student achievements, facilities, consultative services, community backgrounds, and population characteristics of small Alberta high schools with those of larger ones. In almost every comparison the tiny Alberta high school came out second best, often by a decisive margin. The study concludes that quite a few of the smallest high schools should be combined, while others could be strengthened through shared services and other devices.

This Canadian study does not imply what should be the fate of smaller high schools in the United States, for the following reasons. Canadian education developed much later than in the United States, and Canadian rural education has not yet reached the level of quality to which we are accustomed. The Canadian schools are much smaller than ours on the average, and their general characteristics do not compare with ours. One might suspect that in some cases the comparisons are being made between the children of trappers, representing small high schools, with the children

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[17] Lawrence W. Downey, "The Small High School in Alberta." U. S. Department of Health, Education, and Welfare, 1965. ERIC Publication ED-032-167. Published originally by The Alberta School Trustees' Association, Edmonton, Alberta.

of professional people (predominantly) representing large schools. A further weakness of the study is that it uses artificially determined criteria for high school qualities; the nature and quality of programs, facilities, and services that are usually confused as being both ends and means in education. However, there is reference to one study by Knowles and Black,[18] not yet completed, which according to reports found poorer adjustment to university work by students from high schools of less than 500 students than by students from high schools of more than 500 students. This author concludes that if students from small Alberta high schools are not up to the quality found in larger schools, it is because minimum quality standards there have in no way been enforced. The Alberta findings do not fit the situation in Midwestern United States.

A second document that should be called to the reader's attention has been published by the U. S. Office of Education, entitled "Enrollment Size and Educational Effectiveness of the High School."[19] This document summarizes the findings of eighteen studies concerned with the size of the high school in relation to various factors of educational effectiveness in an effort to arrive at what should constitute optimum high school size. All of these studies were published during the years 1956 through 1963. A 1958 study by Lloyd Nelson Andrews exploring the relationship of high school size to school-community relations in California found that parents were better informed and had better parent-school relations in smaller high schools. The study by Barker and Gump in Kansas, showing greater participation in co-curricular activities by students from small high schools, was mentioned in the OE publication, but has already been summarized in this paper. A California study by William Earl Brown in

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[18] Knowles, D. W., and D. B. Black, "Factors Influencing the Prediction of Freshman Success at the University of Alberta, Canada." The Alberta Journal of Educational Research, Vol. XI, No. 2, June, 1965. pp. 71-82.

[19] Grace S. Wright, "Enrollment Size and Educational Effectiveness of the High School." Publication No. OE-24009, Circular No. 732, U. S. Department of Health, Education, and Welfare, 21 pp.

1956 found a positive correlation between high school enrollment and the number of subjects offered. A 1959 study in Arkansas by Jack Collingsworth found that smaller high schools had proportionately more teachers with emergency certificates and fewer with advanced degrees than did larger high schools. Those of us familiar with Arkansas education are aware that the teacher supply situation in Arkansas has changed drastically since 1956.

An Alabama study by Jack W. Crocker (1960) also showed a tendency for teachers in large schools to have somewhat higher academic preparation than did teachers in small high schools.

John C. Flanagan, in his Project Talent study, reported from Pittsburgh in 1962, examined a variety of school characteristics by school size. He found that large high schools are found in different places, and serve different kinds of people, than do small high schools. He makes this general comment: "There seems to be no evidence that size per se is a necessary prerequisite for excellence of student outcomes." Flanagan points out that determining school size must be dependent, among other things, on population concentrations (or the lack of them) and the distance students must be transported. He notes that in some circumstances it would be cheaper to hire extra teachers in smaller schools than to transport students at high cost, or when they ride on a bus as much as two hours a day.

Genero Bruno Garcia found in a 1961 California study that smaller junior high schools may lack certain facilities found in larger schools, but they usually have a more suitable school site, and the pupil-teacher ratio is much more favorable. Student attitudes were found to be better in smaller schools.

Other studies summarized in the Office of Education document showed findings similar to those already reported. An Iowa study by Stuart C. Gray found only small differences in college student performance by high school size, but small schools had more faculty turnover. Lindsey Harmon found more science doctorates teaching in large high schools. Donald Hoyt found that the first-year grades of students

from various size high schools at Kansas State College were quite similar. Ralph Jantz found somewhat more favorable scores on the Iowa Test of Educational Development for students from medium sized high schools, with lowest score averages for students from very large and very small high schools. John Menozzi found student morale somewhat higher in large high schools and teacher morale higher in medium-sized and small high schools.

A California study by David F. Shapiro examined staff relations in high schools of various sizes. He found that in small schools, communications were more effective, and individual staff members performed more effectively, than in large high schools.

Clifford B. Smith of Ohio obtained opinions of high school principals as to what should constitute optimum high school size. Consensus centered around the 800-1200 enrollment range.

Finally, a study in Virginia by James C. Tyson examined teacher-pupil relationships by high school size. He found that teachers in small high schools (enrollment less than 490) had better relations with pupils, knew their pupils better, and knew the parents better than did teachers in large high schools.

Reading all of these research summaries has left the author with more doubt than ever concerning advantages of large high schools over smaller ones. The few research projects using outside criteria to judge programs based on high school size are limited in scope and not conclusive in their findings.

PART TWO
Summary, Conclusions, and Speculations

Summing up the literature concerning high school size, it can be said that most writers who dealt with high school size have favored large schools. These writers have used breadth of offering, efficient use of personnel and facilities, and lower per pupil cost as justification for large schools. One fact concerning all of these studies is quite clear: none has based conclusions on a criterion

apart from the educational process. These studies have blended ends and means, confusing the latter with the former.

As shown by evidence just reviewed, some investigators have produced evidence in favor of small high schools by proving conclusively that the smaller the high school, the richer the co-curriculum. This is doubtless a significant fact, but the co-curriculum is also a part of the educative mechanism. The weight of evidence also shows that teacher-pupil and school-community relations are better in small high schools.

Very few studies have centered on ultimate aims of the high school, which can provide the needed criteria for evaluation apart from the educative process. The author's study is almost unique in this respect, since it examines the first year's success of a substantial number of freshmen entering a specific institution, on the basis of size of graduating class in high school. Studies of this kind should be replicated in a variety of higher education institutions.

On the basis of all available evidence, the author concludes that no one really knows whether large or small high schools are better when the ultimate aims of education are used as the criteria for evaluation. However, there are numerous features of small high schools which tend to give them the advantage, and which have seldom, if ever, been mentioned in the literature. Since they have received little attention, it seems advisable to mention them and speculate on them.

1. Pupil-teacher ratios. There is ample evidence that pupil-teacher ratios tend to be more favorable in small schools. Advocates of large schools have often brushed this fact aside by saying that this ratio produces high per pupil cost. But might it not also contribute to higher quality of learning that can never be approached in large districts and large schools where each teacher is assigned all the students he or she can possibly handle? Consider also the fact that as a school or school district gets larger, more supervisory and coordinative staff are required to run the show. This will either increase per pupil cost or force

the district to adopt even larger class size.

2. Varied assignment. It has often been assumed that the more specialized a teacher can get, the better. This can very easily be carried too far. A high school teacher can very quickly become too specialized and even bored by the endless repetition of the same subject matter and learning concepts. What history teacher, for example, can keep from being bored and narrow in outlook if, year after year, he teaches four sections of World History X? In this respect, teachers in small high schools with their more varied assignments may have a distinct advantage.

3. Individual guidance and counseling. The Conant team mistakenly appraised guidance in terms of the number of guidance counselors, whereas it should be evaluated in terms of the quality of counseling given to individuals by school staff members who know them well. In smaller schools, everyone is known by everyone else; the high school principal will not only know all of the students but nearly all of the parents. Under these circumstances, better guidance is inevitable. Large schools employ guidance personnel to attempt to achieve a relationship with students that small schools often already have.

4. Liberal education. The more limited curriculum of smaller high schools may turn out to be a blessing in disguise. The wide curriculum choice in large high schools has often been cited as a distinct advantage. But is it? Most high school students will accrue 16 or 17 high school credits. If their high school education is liberal or well rounded, any great degree of specialization will prevent the students' taking courses they should have had. For example, it is wise for most high school students to take four credits of English. Many who take four years of mathematics so as to be better prepared for college cannot do satisfactory college work in English, for many of these students take only the three required credits of English. Or they miss some other important part of their liberal education. On the other hand, superior students can take via correspondence

study or individual tutoring, any of a variety of courses not offered in a small high school. The author has seen some of his mathematics students, who were given a few minutes of specialized mathematics instruction per day, graduate at the head of the class in a school of engineering in competition with many students who were graduates of large high schools. Possibly, these students were better taught than were the students who had 30 classmates.

One of the points made by advocates of large high schools is that high school graduates who enter the labor market rather than college are not well prepared for their vocations by the small high school. This view calls for two assumptions: (1) that small high schools cannot prepare students for vocations and (2) that preparation for vocations must be done in the high school. Both of these assumptions are highly questionable. The author has observed how numerous small high schools with enrollments less than 100 have offered instruction in commercial work, home economics, and shop or vocational agriculture, in addition to activities period instruction in the arts, including band and chorus. Concerning the second point, it would seem that advanced work of a vocational nature should be offered in specialized schools. The great bulk of high school curriculum should be devoted to liberal education. I am suggesting that the function of the American high school is to produce a well rounded person who has had sound and basic instruction in a variety of fields of learning; a person who has a good positive attitude toward learning and toward his fellow man. In the face of all present evidence, these aims may be achieved as well as, or better in a small high school than in any other sized school.

5. Transportation. Bussing of school children and adolescents has been accepted as part of American education with scarcely a single critical thought or look. Comparatively little research has been directed toward either the fact of bussing or the length of bus rides. The author would like to avoid the issue of bussing to obtain racial balance but when all aspects are considered, the issue of the desirability of neighborhood schools cannot be avoided. We have plenty of

opinions on all these matters; what we now need are the facts.

Although the Coleman Report[20] and other reports purport to show some evidence that minority students can make better gains in learning at integrated schools outside their own segregated communities, studies of this kind have been largely discredited. Such studies which have come to my attention failed to equate ability levels and home backgrounds of students matched by age and grade level. When bussing is optional, ambitious parents of more able students were usually the ones who petitioned for bussing. The more carefully done studies show no significant difference in gain scores when students are equated for ability. In no case do the children who were bussed show any advantage. There is no solid evidence anywhere that works against the concept of the community school, a concept which provides the minimum of bussing. This principle is applicable in rural as well as urban areas. A few master's seminar papers have to my knowledge been directed toward the academic and social problems of adolescents who ride busses to school. These studies provide indirect evidence that long bus rides have an adverse effect on the social and academic lives of the riders. When one considers the kind of "education" that goes on inside a typical school bus, long bus rides do not look very appealing.

6. Teacher Quality. There was a time when large school systems could pay much higher salaries than smaller school systems, and therefore they obtained the best teachers, while smaller schools sometimes had to accept substandard teachers. That time is now past. There is now a movement of experienced teachers from larger to smaller schools and districts where salaries are not inferior. Salary is not the major consideration. Where working conditions in smaller schools are more acceptable, faculty will want to move into smaller schools. This trend has already been noticed for teachers in higher education. The author notes that a branch campus of his own institution enrolling 140 students had 743 applicants

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[20] James S. Coleman, Earnest Q. Campbell et. al., Equality of Educational Opportunity. Washington. U.S. Department of Health, Education, and Welfare. 1966, pp. 737.

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for eight positions, many of them tenured faculty in large universities who wanted to get to a small, quiet campus where they could "teach in peace." The same reaction is being expressed by high school teachers. Some very good teachers are seeking out smaller schools, so that faculties of small high schools may very well have moved to par with those of large schools, and may in the future surpass large schools. Medium-sized schools seem to be in a favorable position. But with today's adequate teacher supply, only the trouble-ridden large school will have difficulty with staffing.

7. Working conditions and general atmosphere. Working conditions have already been mentioned in connection with local teacher supply. The conditions that drive good teachers out of a school system are the same conditions that hinder their work in the teaching setting. In core high schools, and in large high schools where student activism is not held in check, teacher morale tends to be lower than elsewhere. Though not all teachers feel apprehension about their safety, a good many in this kind of teaching setting have a sense of frustration in their attempts to settle down to the business of learning. Medium-sized and small high schools are much less likely to have these problems, although they may have other types of problems. It may be generalized that in a good many large high schools it is necessary to pay higher salaries to compensate for less desirable working conditions and higher cost of living. This is why salaries in various sized school systems cannot be compared dollar for dollar.

8. Wholesome atmosphere for students. This is perhaps the most important consideration where high school size is concerned. It is the Achilles heal of the large high school. The adolescent has little experience to know which habits and attitudes, picked up while he is in high school, will destroy his health and integrity. The adolescent badly needs the guidance of parents and teachers who know him well in order to avoid these pitfalls, but especially to be encouraged in constructive or wholesome activities. The larger the school, and the greater the dis-

tance students are transported, the less likely that parents, teachers, and students can get to know each other well enough for constructive guidance to take place. Behaviors which are cause for concern are not simply habits of drinking, or smoking cigarettes, or pot. I refer particularly to speed, heroin, LSD, shoplifting, mugging, mob action, robbery, and threats, whether students are perpetrators or victims. Most damaging to any society is a huge peer group of little-supervised adolescents who know little of the facts of life through experience, who listen to no one but themselves, and who do just as they please or are the victims of some unscrupulous pressure group. Any large high school is potentially this kind of phenomenon. In avoiding youth corruption, the small high school, where everyone and his deeds are known, is superior. The problems are not the fault of teachers and principals. Consider the fact that it is not now considered legal to search a student's locker to see if he has heroin or explosives cached there. Good supervision of student conduct is almost impossible in many large schools.

A recent newspaper article tells of a study recently released by the Center for Research and Education in American Liberties at Columbia University.[21] Apparently the Scranton Commission on Student Unrest overlooked one basic dimension: American high schools have themselves become hotbeds of student unrest, and they bring unrest to college. The conclusions of the study are questionable, but in connection with large high schools, we know just what is meant by "It (the study) explores how students, treated as cattle in high school, emerge woefully equipped to.... make the mature decisions essential in any democracy." In this writer's observation, the people just described are almost entirely poorly adjusted students, typically from large high schools, who never came under the steadying influence of their teachers.

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[21] Reported in Milwaukee Journal, Sunday, October 18, 1970. Eric Wentworth, Washington Post Service.

9. Community Support and Democratic Control. Finally, there is the democratic process and identification with the school to consider. More and more, it is difficult to obtain bonding approval for school construction. The truth is that the public is much more willing to pay higher taxes when schools are located in the local community and under local control. The author has observed many smaller districts where citizens are willing to pay high taxes when they can enjoy local control. They feel a sense of loyalty, intimacy, and friendliness toward school and teachers. They know where their young people are and what they are doing. In cases of consolidation where pupils are bussed to schools in another community, local contact and interest lag, and tax resistance enters in. Local youth delinquency has been known to increase in such communities.

A final, important consideration relating to high school size is the democratic concept. Can there be any really democratic operation of schools if there is no local control? The truth is that huge schools and huge districts do not provide the kind of democracy with which American people are satisfied. Furthermore, local government is the training ground of state and national leaders. If you destroy local units of government, you destroy America. That is why New York City is turning to local control of education.

The study of comparative education provides many examples which illustrate the need for local control. French education is one example. At one time the French were thought to have the finest educational system in Europe. Because it was highly centralized and regimented, French education deteriorated steadily and lacked variety.

The nine points just discussed are not accompanied by research evidence on school size. But they should be considered in any comprehensive discussion concerning desirable high school size.

What conclusions are evident if small high schools do actually compare favorably with large ones? First of all, since the advantages of large schools have been

published for many years for the benefit of those who operate small schools, so the advantage of small schools should be published for the benefit of those who operate large schools. Large cities are not going to have small schools. But school size should be limited as much as possible. Already some large high schools are being divided into smaller units. The more this is done, the better will be the guidance and co-curricular activities provided, and the easier it will be to control undesirable habits and poor attitudes of adolescents.

To what extent should schools be consolidated in two or more rural communities? We still lack enough evidence to answer this question. At this point, it seems to the author it is unwise to bus students out of any community that is able to maintain a high school which can offer a good liberal curriculum and a few vocational-oriented courses. Such schools should be encouraged and helped, rather than harrassed, by state and national officials.